



## RESEARCH LINE: NEUROINFLAMMATION

### CELLULAR NEUROBIOLOGY GROUP

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#### Research lines

In our group, we are interested on the study of neuroinflammation. Neuroinflammation, in which reactive glial cells are mainly involved, has been repeatedly suggested to play a key role in the development of most neurodegenerative diseases. Glial activation is a process occurring in the presence of neuronal damage, involving morphological changes as well as changes in the expression of several molecules in astrocytes and microglia. It remains to be established if glial activation is a consequence of neuronal degeneration or is a previous phenomenon.

The main objective of the Cellular Neurobiology Group is to obtain information that could help to develop new strategies to contribute to the prevention and improvement of neurodegenerative processes occurring in the presence of chronic glial activation, using appropriate cellular and animal models. We are studying the implication of certain transcription factors (C/EBPs and NF- $\kappa$ B) and other proteins (p21 Cip1, CD200, CD200R, TREM-2) in the process of glial activation and its derived neurotoxicity. Our hypothesis is that the modulation of the function of these proteins may be a target to act against neuroinflammation and neuronal damage occurring in neurodegenerative diseases.

We perform *in vitro* and *in vivo* studies using experimental animals, primary cell cultures (mixed glial cell cultures, enriched microglial, astroglial or neuronal cultures, mixed neuron-glia cultures) and cell lines. We are expertise in cytological, histological, biochemical, and molecular and cellular biology techniques.

**Key words:** glia, microglia, astrocytes, glial activation, p21 Cip1, C/EBPs, CD200, CD200R, TREM-2, neuroinflammation, neuroprotection, glial cell cultures, Alzheimer's disease, Amyotrophic Lateral Sclerosis.

#### Group Members

The actual composition of the group is: 4 senior scientists (Dr. Carme Solà, Dr. Joan Serratosà, Dr. Josep M. Tusell and Dr. Josep Saura), a postdoctoral fellow (Dr. Tony Valente) and 3 predoctoral students (Núria Gresa, Marco Straccia and Guido Dentésano).



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